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ABSTRACT

This master plan sets forth mission statements for each component of Nevada's system of higher education and outlines overarching goals for the system within a 10-year time frame. It also describes targets and strategies directed at achieving these goals. Nevada is the fastest growing state in terms of percentage growth, yet trails most other states in the percentage of its high school graduates who enroll in higher education and earn degrees. Four goals are established for Nevada higher education: (1) Nevada will equal other states in the participation and success of its students in higher education; (2) Nevada will provide consistently excellent learning experiences for its students in higher education; (3) higher education will be an essential element in developing a strong and dynamic economy for Nevada; and (4) through instruction, service, and research, higher education in Nevada will be instrumental in advancing society's objectives and enriching the state's residents. Targets, strategies, and shared responsibilities are outlined for each of these goals. (SLD)

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A Master Plan for Higher Education in Nevada

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UNIVERSITY AND COMMUNITY COLLEGE SYSTEM OF NEVADA

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A Master Plan for Higher Education in Nevada

No other state faces a greater challenge to its higher education system than does Nevada.

- Nevada is the fastest growing state in terms of percentage growth.
- Yet, Nevada trails most other states in the percentage of its high school graduates who enroll in higher education and continue until they successfully earn a degree.

The State of Nevada will fail itself if it does not respond effectively to the inescapable necessity of providing quality educational opportunities to a growing and more diverse population – now and in the future.

Recent state-by-state comparisons have placed a spotlight on inadequacies and inefficiencies in Nevada's educational system at the same time that unprecedented demand is building for quality services in a learner-based economic environment.

The University and Community College System of Nevada (UCCSN) is committed to using its present resources in the most effective and efficient way possible. With this Master Plan as a framework, the UCCSN will begin the process of change by reexamining the way it conducts higher education in Nevada. Only after that process is underway will the System turn to students, their families, taxpayers, elementary and secondary educators, and others for additional resources. Ultimately, however, assuring access to quality education in the challenging era ahead will require more than just the commitment of UCCSN. Achieving the ambitious agenda set out in this Master Plan will require shared responsibility between all of these stakeholders.

With an acknowledgement of the extensive, often difficult obligations to be discharged, this Master Plan sets forth:

- **Mission Statements** for each component of Nevada's system of higher education;
- **Overarching Goals** for the system set within a 10-year timeframe; and,
- **Targets and Strategies** directed at achieving the longer-term Goals.

The mission of the UCCSN is established. As stated by policy of the Board of Regents, the mission "is to provide higher education services to the citizens of the state at a high level of quality consistent with the state's resources." Toward that end, the UCCSN is charged with "providing an educated and technically skilled citizenry for public service and the general welfare, to contribute toward an educated and trained workforce for industry and commerce, and to facilitate the individual quest for personal fulfillment."[1]

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[1] *Source: Regents Handbook, Title 4, Chapter 1, Page 1*

To implement that mission effectively, there is a need to define the specific roles for components in the System and to establish realistic Goals, Targets, and Strategies by which to measure the progress of individual institutions and the combined System.

The implementation of Strategies will reveal if the UCCSN is achieving the Targets and progressing toward the Goals. Strategies must be refashioned and Targets adjusted as circumstances change, or if there is a failure to accomplish one objective or another. The Goals, however, are likely to stand as longstanding beacons to guide the development of new and innovative Strategies and more sharply defined and focused Targets.

MISSION DIFFERENTIAION

As Nevada grows, so will its system of higher education. Nevada's relentless demographic upsurge compels the UCCSN to determine the most efficient and effective way to manage growth in the best interest of students. No single institution can provide all things to all students. Some students are better served in one educational setting than another. Needless duplication and competition dilute the quality of the education experience whether in the classroom, the research laboratory, or in off-campus settings. This is particularly true when resources are limited and there is insufficient demand to sustain both quality and access.[2]

Consequently, it is essential to distinguish and to make clear the missions of the System's various segments so that resources are allocated and programs operated equitably, efficiently, and in a justifiable manner. Clearly defined missions provide the foundation for policies that help match educational supply to the demand for services brought on by growth.

This Master Plan lays out distinct missions for the primary components of Nevada's system of higher education.[3]

- **Comprehensive Community Colleges**erve specific regional areas. With an open-door admissions policy, these institutions will emphasize opportunity for all Nevadans to gain access to a quality education. In fulfillment of the community college mission, these institutions offer remedial education, general education, workforce development, vocational and technical training, and associate degrees that provide seamless transfer to state colleges and universities. In some cases and under specified criteria, these institutions may offer selected niche baccalaureate degrees.

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[2] Many argue today for allowing market forces to address the future needs for higher education through competition for students, research dollars, etc. This statement, however, argues that Nevada's limited resources and unique lack of critical mass call for a more "planned" response to the challenges of sustaining access and quality in the challenging years ahead.

[3] This proposed set of institutions to serve Nevada's future, each with a clearly differentiated mission, includes a number of differences from the current structure of institutions that serve the state. In particular, it envisions substantial change in the role of community colleges and the evolution of new types of institutions to serve unique workforce issues in Nevada's future. It also calls for clearly different but complementary research missions for Nevada's three research institutions, as suggested in the RAND/CAE report.

High Tech Centers are associated with the comprehensive community colleges. These centers serve as centers of excellence for promoting economic diversity through workforce development and technology training for all Nevadans. The centers also provide beginning-level general education courses and remedial course work to both students currently enrolled in high school and students who wish to continue their education.

- **Technical Institutes** are associated with existing community colleges and offer upper course level, specialized, vocational, and technical education. With an open transfer policy, these institutions will offer Nevadans holding associate degrees, the opportunity to gain access to a quality technical education leading to specialized baccalaureate degrees.

- **State Colleges** are regional institutions offering comprehensive education at the baccalaureate level in specific, regional niches with limited professional graduate degrees. Admissions policies will define minimum levels of preparation that match the academic focus of the institution.

- **Universities** that are comprehensive research institutions offering education from the baccalaureate through the master's and doctoral levels. The universities will provide selected graduate and professional programs in niche areas, and doctoral programs will correlate to defined research strengths. The universities will make significant contributions to new knowledge, economic development, and the culture of the state. Selective admission policies will define specific preparation levels necessary to be successful.

- A **Research Institute** that focuses on environmental sciences and engages in fundamental and problem-oriented research within an entrepreneurial and academic culture. The Institute will foster interdisciplinary approaches and scientific teaming, improve management of natural resources, and apply technologies to global issues while helping to meet the needs of Nevada. The Institute will not grant degrees but will support the educational programs at other UCCSN campuses by partnering in teaching and mentoring programs, student support, and internships.

These mission guidelines serve as templates to develop policies and criteria that guide new or expanded teaching and research, alternative delivery systems, revised administrative structures, and even the establishment of new institutions. Without clear mission parameters, the strain of explosive growth will compel haphazard, inefficient use of finite public and private resources. With them, reasonable criteria are possible to help the System to meet the challenges of the next decade more effectively and efficiently.

Within the context of its stated mission, each existing or future institution is linked to the long-term Goals, Targets, and Strategies in this Master Plan.

GOALS FOR HIGHER EDUCATION IN NEVADA

At this stage of Nevada's development, four Goals are paramount for the University and Community College System of Nevada:

- **Goal 1: Nevada Will Equal Other States in the Participation and Success of its Students in Higher Education.**
- **Goal 2: Nevada Will Provide Consistently Excellent Learning Experiences for its Students Through Instruction and Research.**
- **Goal 3: Higher Education Will be an Essential Element in Developing a Strong and Dynamic Economy for Nevada.**
- **Goal 4: Through Instruction, Service, and Research, Higher Education in Nevada Will Be Instrumental in Advancing Society's Objectives and Enriching the State's Residents.**

Goal 1: Nevada Will Equal Other States in the Participation and Success of its Students in Higher Education[4].

As one policy leader in higher education has pointed out:

> "No other state in the West, or the nation for that matter, faces as severe a challenge as you face in Nevada in trying to maintain and hopefully even expand access and success in higher education. Simple demographics will require at least a 50 percent expansion of services just to meet the demand from traditional-age students over the next decade. This challenge will be exacerbated by the fact that a disproportionate share of these new students will come from communities of color and the disadvantaged that we, as a nation, have not traditionally served well in higher education."

The fact is that Nevada's rate of participation of its students in higher education and the success with which they complete their degrees is the lowest in the West and among the lowest in the nation. While this has been the case for some time, the continuing demographic upsurge magnifies the urgency of grappling with this dominant problem – namely, enrolling students in postsecondary education at some level and getting them to complete their work once enrolled.

The Nevada State Demographer's Office reports the state can expect to grow by another 600,000 (or more) residents by 2010. According to the Western Interstate Commission for Higher Education (WICHE), the number of high school graduates is projected to increase by approximately 60 percent during the next decade.

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[4] The goal of ensuring access is presented as the first goal, both because it reflects the unique role of public higher education, as compared to other sectors of higher education, and because it reflects the greatest challenge for Nevada over the time period reflected in this Master Plan.

In addition to this rapid growth in absolute numbers, the state's population is increasingly diverse. The state demographer projects an increase of approximately 40 percent in the number of Hispanic/Latinos in Nevada by 2010 compared with an increase of about 15 percent for White Non-Hispanic/Latinos. By the end of this decade, Nevada can expect that one in every three residents will be Hispanic/Latino, African American, American Indian or Alaska Native, Asian, or Native Hawaiian or Other Pacific Islander. Despite progress in including more traditionally underrepresented racial and ethnic residents in higher education, these groups (with the exception of some Asian groups) generally have not participated to the same extent or been as successful as the majority White population.

Nevada has a choice to make. It can continue funding its higher education system at the present level, thus constricting access even more in the face of intense growth and widening diversity. It can increase support to accommodate the demographic explosion, but that does nothing to broaden opportunities for thousands who are underserved, drop out, or never participate. Or, Nevada can supply the resources necessary to meet the varied educational needs of an expanding and changing population. This Master Plan is founded on the belief that Nevada will select this last option.

Consequently, it is imperative that Nevada rectify the unacceptable number of:

- High school graduates who are ill-prepared for college
- High school students and other young adults who do not participate in postsecondary education
- Students who enroll in higher education, abandon their education, and fail to complete their educational programs.

Goal 1: Targets[5]

Raise the percent of Nevada's high school graduates who continue their education to the average of the 15 western states in the WICHE region
This is an ambitious goal considering only 40 percent of Nevada's year 2000 high school graduates entered college within 12 months of graduation compared to a WICHE average of 53 percent. (There is some cause for optimism since the college-going rate for Nevada's 1998 graduates was 37 percent.) It is imperative to at least reach the regional average if Nevada is to provide for its citizens the same level of educational opportunity afforded citizens elsewhere in the West. Furthermore, achieving parity in participation with the rest of the West will contribute substantially to assuring the better-educated workforce that Nevada will need to diversify and strengthen its future economy.

Recognizing the ambitiousness of this target, the success of the System as a whole and each component will be judged both by progress toward the ultimate goal of parity in participation and based on continuous improvement. The targets of various

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[5] Each of these Targets has been established to place Nevada in a competitive position compared with other states. These specific targets were selected because they shared three important characteristics: they were consistent with the System's mission statement and the goal to which they were referenced, they were relatively easily measured, and they could be compared to other states so that Nevada could continue to understand how it measured up in relative terms.

institutions will need to vary depending on differentiated missions and differences in demographic demand and linkages to other goals, but the sum of the parts need to add to the Systemwide goals.

Increase the percent of students who successfully complete bachelor's level degrees in six years to the regional average of the WICHE states Available data reflect that Nevada lags the Western average bachelor's degree completion level by approximately 4 percent. Six-year graduation rates will be available from the National Center for Educational Statistics early in 2002 and regularly available from the federal government thereafter. This will provide an inexpensive and valid measure for comparison.

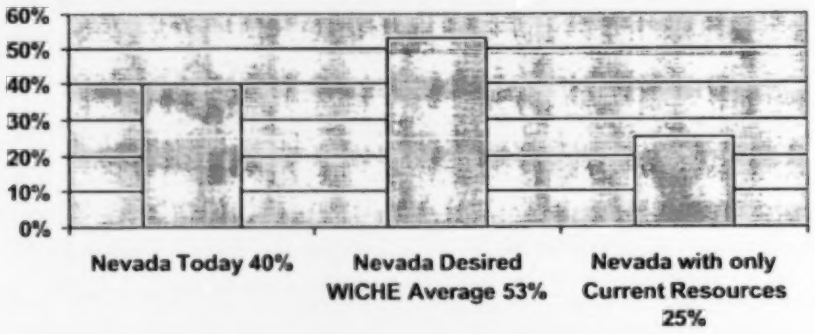
Increase the percent of community college students who complete associate degrees in three years to the regional average of the WICHE states. Available data reflect that Nevada lags the Western states' average for associate's degree completion by approximately 7 percent. Three-year graduation rates will be available from the National Center for Educational Statistics early in 2002 and regularly available from the federal government thereafter. This will provide an inexpensive and valid measure for comparison.

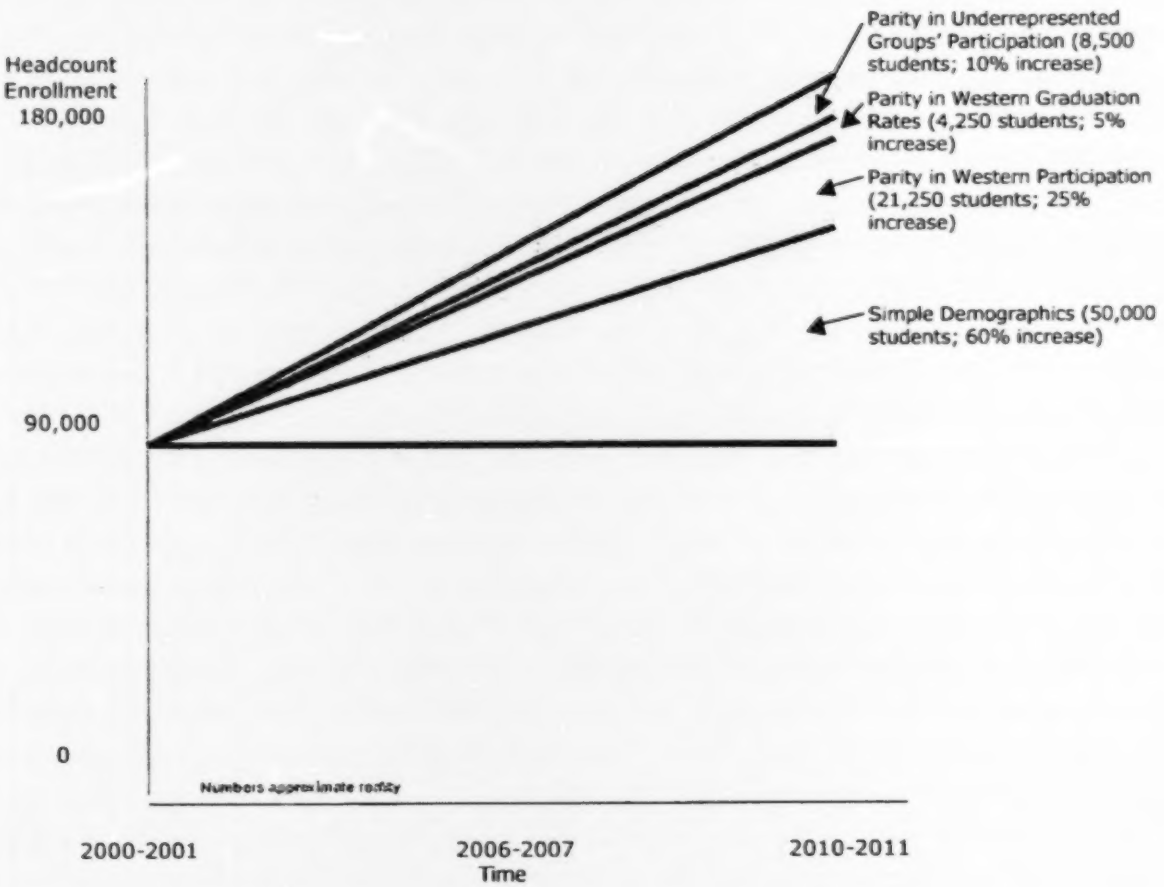
Bring traditionally underrepresented racial and ethnic groups' participation in higher education into parity with the White population. This, too, reflects a very ambitious goal considering that prospective students of color in Nevada currently are only 58 percent as likely to participate in postsecondary education as are prospective White students. Obviously, achieving the goals of expanded participation and successful completion will help address the under-representation of these students in Nevada's higher education system, but achieving parity in participation will require exceptional efforts even beyond those necessary to achieve these other goals. As with the Targets on participation, the measurement here will be on continuous improvement toward the ultimate objective.

As reflected in the figure below, achieving these goals will require approximately a 100 percent aggregate increase in the number of students over the next decade. The percentage increases for each Target may vary at different institutions. Simple demographics will increase the demand for postsecondary education by approximately 60 percent across the state. If, for any reason, this demographic demand is not served, the state will slip further behind in fulfilling the mission of providing higher education services to Nevada's citizens.

For example, if Nevada simply maintains roughly its current supply of available options because the resources cannot be found to meet the expanding demand, the participation rate would have to be reduced from its already low 40 percent to 25 percent. This not only would place Nevada at less than one-half the WICHE participation rate, it also would place Nevada below almost all developed countries in the world. And, indeed, this is not a preposterous possibility because many observers in Nevada have been heard to say that, "While the needs are clear, it is unrealistic to expect that the state will be able to increase its support in the future." So, failing to respond to the need obviously would have a catastrophic impact on educational participation and opportunity in Nevada.

Participation Rates in Nevada with Alternative Scenarios





In reality, participation would likely not decline to this level, because many students would likely look to colleges and universities elsewhere to attend, but the resulting "brain drain" would create other long-term problems for the state.

Even the ambitious agenda presumed in this strategic plan will, at best, only get Nevada up to the average in its region. And, even that may not occur, because other states will move forward with their own efforts to increase participation and completion rates, thereby intensifying Nevada's task of catching up.

In addition, the policy objectives reflected in the Targets for participation, if actualized, will add substantial further demand for services. Increasing the participation rate to the WICHE averages will add at least an additional 25 percent to the projected increases in student demand. Achieving the increased graduation rates will increase this by an additional 5 percent. And erasing a substantial portion of the gap in participation and success rates of students of color will add at least an additional 10 percent, above and beyond what occurs simply from achieving the other objectives.[6]

In sum, therefore, simple demographics will increase the demand by about 60 percent, and desired policy objectives, if achieved, will add at least an additional 40 percent in demand. (Actual percentage increases in each category may vary by institution.) While these proportions may seem staggering, they are what it will take to achieve what have reasonably been established as the future postsecondary needs of Nevada and its citizens.

At current levels of funding, supporting this growth would require an additional $420 million annually (in current 2001 dollars) by the end of the decade from tuition revenue and state appropriations. (See financial discussion near the end of this paper.)

Goal 1: Strategies

- Complement the merit-based Millennium Scholarship program with additional need-based financial aid so that higher education is more affordable for those least able to pay. A strong need-based financial aid program would require an initial infusion of $9 million annually, growing to $22 million per year, unadjusted for inflation, by the end of the decade.[7] Provisions for adequate financial aid cannot be separated from increases in tuition and fees.

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[6] These projections have been derived from the most current information available from WICHE's Policy Indicators for Higher Education: WICHE States, November 2000, from the National Center for Education Statistics most current edition of Projections of Education Statistics to 2010, and from Measuring Up 2000, the November 2000 Report from the National Center for Public Policy and Higher Education.

[7] This projection of the need for financial aid has been calculated by comparing current levels of need-based student assistance in Nevada to levels of need-based student assistance in the state of Washington. The projection has been benchmarked to Washington because it is considered a leader in the student aid arena in the West. The comparison adjusts for differences between the two states in both the number of students served and the price (tuition) charged. Tuition in Nevada is assumed to increase to the level required to achieve the students' and families' shared responsibility portion for funding the expansion of the system that will be necessary to meet enrollment demand in the future.

- Share responsibility for financing enrollment growth among (1) the State of Nevada through increased appropriations, (2) students and their families through increased tuition and fees, and (3) the UCCSN through increased efficiencies and fund-development. This will assure sufficient funding to meet the demand for educational services.[8] Improved access to higher education cannot prevail without financial sharing by the state, the system, and the students.

- Forge programs and policies that guide underrepresented populations to greater success in higher education. Students who come ill-prepared to college or who come from cultural backgrounds that differ substantially from the culture of the college community often need intensive assistance to succeed in college. More supportive and inclusive campus climates need to develop, and this can be hastened by strengthening diversity and affirmative action offices on campuses. Programs such as the federal TRIO support services program have proven successful in enhancing the retention and persistence of at-risk students and can be models for broader campus-wide programs.

- Strengthen linkages with the K-12 system to improve graduation rates and the preparation of high school students for success in postsecondary education. Advanced Placement programs and the federal GEAR-UP and TRIO Upward Bound programs are potential models to help achieve this objective.

- Work with the K-12 system to reduce the amount of remedial work needed by recent high school graduates by 50 percent. Recent efforts in Georgia suggest that a reduction of this magnitude is achievable. Georgia achieved

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[8] As indicated earlier, all else being equal, an additional $420 million will be needed to support a doubling of the demand for higher education during the next decade. Because tuition revenues naturally double with a doubling of the number of students, the unfunded component is actually $320 million. This analysis presumes that the State should share one-half of the financial responsibility for this increase. While this will require a substantial increase in the level of state funding, it reflects a substantial decline in the average funding per student and an appropriate share of responsibility considering the substantial return on investment the state will receive from a better educated citizenry. Increasing tuition and fees sufficiently to cover one-fourth of these total additional costs would require a real increase in tuition and fees of 40 percent over the decade. This would increase Nevada's average tuition and fees to slightly above the WICHE average, assuming other states maintain their current tuition and fee rates. An increase of this magnitude would increase average Nevada tuition and fees to approximately those currently charged in the state of Washington. Research indicates that an increase of this magnitude, though without doubt unpopular, would not erode enrollment. Covering the remaining one-fourth of the total additional costs through improved efficiency in Nevada's system of higher education would amount to a reduction in funding of nearly $900 per student FTE. While some efficiency will be achieved by the System through the natural economies of scale that will accompany substantial enrollment growth, reductions of this magnitude will require attaining substantial other real efficiencies within the System to maintain access without eroding the quality of services provided. This level of productivity improvement (about 1 percent per year), however, is consistent with the level often suggested in Total Quality Management and Business Process Reengineering principles. The impact of this reduction in average funding could also be mitigated by encouraging both private non-profit and for-profit institutions to expand their offerings in Nevada and by encouraging greater mobility of students through WICHE's student exchange programs.

this through a combination of efforts, but perhaps the most critical factor was increasing the incentive for high school students to take rigorous college preparatory courses, thus substantially improving their preparation for college.

- Anticipate that students on average will reduce their time-to-degree by up to one term by concurrently enrolling in courses accepted for credit at both K-12 and college levels.

- Work with two-year and four-year institutions to reduce the number of credits in individual programs where possible and to reduce the extra credits that students obtain because of transfer issues or faulty advising. Success in reevaluating the total credits needed for each degree program will help students complete an associate or baccalaureate degree in a more timely manner.

- Encourage students taking classes ad-hoc to commit to seeking a degree and thereby increase the size of the cohort of degree-seeking students. Presently, significant numbers of students take classes but are not enrolled in a specific degree program.

- Develop more substantive school-to-career connections through stronger work-study programs, workforce development, internships, community service, and related initiatives. This will require collaboration and shared responsibility among K-12, government, business and community leaders, and components of the UCCSN.

- Expand delivery systems to include targeted remedial education, generally available only in the state's open admissions institutions, effective articulation between components of the system, integrated technology-mediated instruction, and easing the import and export of students.

- Expect that all students on average will have participated in some quality technology-mediated instruction before graduation, thus increasing the productive utilization of existing physical infrastructure and reducing the need for expansion.

- Extend the use of existing and anticipated facilities on weekdays, evenings, weekends, and summers for more effective and delivery of education. Year-round operations enhance the objective of reduced time-to-degree and expand opportunities for adult education.

- Employ enrollment management techniques to enroll more students in community colleges and state colleges in order to provide educational opportunities at the lowest cost per student.

- Encourage one or more private institutions to establish a campus in Nevada for traditional undergraduate students.

- Form new public institutions, branch campuses, or off-campus centers only if they meet minimum thresholds for sustaining adequate demand and quality education. Services should not be redundant with the expanded services provided by existing institutions.

  - No community college should be established unless it can generate at least 1,000 headcount enrollment (500 FTE students). This is roughly the absolute minimum number of students necessary to sustain the faculty, facilities, and support structure for an educationally viable and cost effective community college. Sustaining a community college of this minimum size in a community with no other postsecondary institutions of substantial magnitude would require a population of at least 25,000. [9]

  - No four-year college should be created unless its population service area can support at least 2,500 FTE students.

  - Similar thresholds should be developed for establishing off-campus centers and branch campuses.

Goal 1: Shared Responsibility

Principal leadership for accomplishing Goal 1 will come from the State, the UCCSN, students and families, and Nevada's K-12 system. In addition, the Federal government will be a significant partner in accomplishing this Goal.

Goal 2: Nevada Will Provide Consistently Excellent Learning Experiences for its Students Through Instruction and Research.

Quality in both the educational and research ventures of the UCCSN is listed as the second goal because it is such a critical component in the System's mission. While access is the first responsibility of public higher education, access without quality would offer a false promise.

More is required, however, than simply declaring that Nevada's students will have a range of excellent educational opportunities from which to select, or that Nevada's three research institutions will provide more high quality research in areas unique to each of their respective missions. We must be able to measure the effectiveness of student learning and the contribution to new knowledge produced through research. Higher education institutions must be held accountable for providing this effective education and research in the most efficient way possible.

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[9] Research in other states has indicated that a minimum of 500 FTE is necessary to sustain an educationally viable and cost-effective community college. At this minimum level, costs will be relatively high and offerings relatively limited. The size of the community needed to support this is based on an assumption that 7 percent of the adult population enrolls at any one time, which reflects roughly the average participation of adults in America today.

Nevada's doctorate-granting institutions devote a considerably greater percentage of their internal institutional budgets to research and development (R&D) in science and engineering than do other states. About one in every three dollars spent on scientific and engineering R&D at the universities comes from institutional resources while that ratio averages one in five dollars in other states. Success in increasing the share of R&D support from government, business, industry, and other external sources will set free funds for building educational excellence in other ways.

While Nevada strives to make available a system of higher education without gaps, it is nevertheless recognized that limited resources and competitive forces prevent institutions from being all things to all students. Nevada's higher education system may not be able to do everything, but what it undertakes should be of the highest quality. Consequently, the "what and where" of educational and research offerings requires thoughtful differentiation of institutional missions at all levels.

Goal 2: Targets[10]

Develop effective measures of student learning outcomes. Effective learning is the ultimate goal of higher education. As a community, however, higher education does not currently measure learning outcomes in any broadbased or effective way. This fact is reflected unmistakably with a recent national report card that gave every state an "Incomplete" in this area. "The Incomplete grades highlight a gap in our ability as a nation to say something meaningful about what students learn in college," according to the authors of *Measuring Up 2000: The State-by-State Report Card for Higher Education.* Institutions are challenged to shift focus from what is taught to what students actually learn.

While exact measures of student learning are needed, knowledge in this area is primitive. Working with Nevada's academic community and observing other states' attempts to assess student learning will lead to more precision.

Establish assessment and accountability measures for institutions and programs. Many states have set up scorecards to help in assessing the effectiveness of programs and public institutions and holding them accountable. Nevada also must establish these measurements for its institutions and programs. Assessment elements may include peer review, quality evaluations after a reasonable period of operation, and sufficient enrollment to justify program continuation.

Define and differentiate the instructional and research missions of Nevada's institutions. Once explicated, this differentiation can provide the rationale for decisions on which programs might be added or eliminated and which research activities to be pursued.

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[10] *These Targets have been developed as appropriate to the Goal. They have less specificity than the Targets associated with Goal 1, because higher education is at a more rudimentary stage in its understanding of how to measure student learning for the purposes of public accountability.*

Decrease the dependene on institutional funds for R&D (research and development) by attracting more Federal and private support for these purposes. Achieving this objective will allow the UCCSN to release those resources for other objectives. Institutions need to cooperate on their research missions, especially given Nevada's modest size and programmatic limitations.

Goal 2: Strategies

- Review, differentiate, and approve the diverse education and research missions of each institution and the varied components within the UCCSN by 2002.

- Have comparable institutions at each level in the System develop (1) common measures of student learning and (2) institutional performance indicators that can be implemented and reported by 2004. Such measurements are not common in higher education now. Nevada has the opportunity of being in the forefront of developing these measures.

- Link research and instruction more closely through reallocation of institutional resources.

- Create a System academic master plan and a System research plan to guide Board decisions.

- Establish incentives for improving time-to-degree, credit-to-degree, transfer rates, and graduation rates.

- Enhance the learning environment through additional advising and mentoring, joint student-faculty research and service projects, and faculty training to improve teaching excellence.

- Establish new programs only if a strong case can be made on their need based on student demand, unmet workforce needs, or compatibility to research agendas, and the overall mission of the institution.

- Review existing programs with the use of standards that incorporate consequences for accomplishments and deficiencies. Reviews would extend to programs at all levels from workforce training through associate level and undergraduate disciplines to graduate level and professional programs.

Goal 2: Shared Responsibility

The UCCSN and students and their families will be principally responsible for progress on Goal 2 with important contributions coming from the Federal government and Business and Community leadership.

Goal 3: Higher Education Will be an Essential Element in Developing a Strong and Dynamic Economy for Nevada.[11]

States that have built the strongest economies also have strong systems of higher education. Higher education supplies the catalyst through which economic growth and development flourishes or falters.

No strategic plan for Nevada's system of higher education would be complete without an explicit goal focused on the System's importance to the economic development of the State. While higher education serves as more than simply an economic generator, this is one of public higher education's most important functions.

In Nevada, a vibrant economy depends on the availability of a first class educational system extending from K-12 through graduate schools and extending to postgraduate research, development, and innovation. Nevada is poised to broaden and diversify its economy while relying on the gaming and resort industries as a solid economic base.

Community colleges, along with their associated technical institutes and high tech centers, are pivotal in the development and diversification of Nevada's economic base. Together, they provide an educated and skilled workforce and serve as an important transfer point for students to progress to more advanced programs.

A recent external assessment of Nevada's standing to develop a technology-intensive economy concluded that the "university system" has not reached national prominence in research and development (R&D) or in "industry partnering." This assessment also pointed to a chronic shortage of technology workers and a "brain drain" of science and engineering graduates to other states. Higher education will confront such shortcomings through more effective collaboration with government, business, and industry and, consequently, help the state to achieve its economic aspirations.

Nevada trails other states, especially in the West, in the share of state and federal government funding it receives for research and development (R&D) in science and engineering. Approximately 55 percent of Nevada's science and engineering R&D comes from federal government resources compared with almost 70 percent for the 15 WICHE states and more than 60 percent for all 50 states. Boosting the amount and the share of government supported R&D funding, especially from the federal government, is linked directly to developing and supporting Nevada's economic expansion and diversification.

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[11] *Much of what is reflected in this section of the Master Plan has been shaped by the findings and recommendations of the Battelle report titled "A Technology Strategy for Nevada."*

Goal 3: Targets

Develop responsive education programs that focus on critical stages in identified fields. The System will set specific annual targets by which to judge advancements or insufficiencies in achieving this Goal.

Raise the proportion of workers and the number of graduates in high-skill fields who come from Nevada's higher education institutions rather than from out of state.

Increase the share and the amount of R&D funds supplied by the Federal government and other non-institutional sources.

Apply a significant portion of research resources to specific economic objectives.

Focus workforce development to meet community needs in those sectors with the highest potential for growth.

Goal 3: Strategies

- Form a single functional infrastructure to help faculty work with business, industry, and government in technology and research transfer and workforce development.
- Establish a program of endowed chairs in research and development through financial partnerships with business, industry, and state government. In a competitive environment, endowed chairs provide a legacy to attract the best professors and researchers and help to build academic strength.
- Stimulate a reward structure for successful R&D funding combined with an accountability component that builds upon the successful Applied Research Initiative model.
- Increase faculty opportunities to work with business and industry.
- Arrange campus facilities and support services as incubators to nurture the development of new businesses.
- Provide resources to address workforce requirements in the five clearly most-needed and five most-desired disciplines or programs where there is sufficient enrollment demand. Program development outside those parameters will not be supported with public funding. Institutions should be expected to increase enrollments in these key programs once they are started.
- Create and adequately support professional programs that serve key occupational needs.

Goal 3: Shared Responsibility

Principal partners in achieving Goal 3 are the State of Nevada, the UCCSN, and Business and Community leaders, with significant involvement by the Federal government through its funding.

Goal 4: Through Instruction, Service, and Research, Higher Education in Nevada Will Be Instrumental in Advancing Society's Objectives and Enriching the State's Residents.

Nevada's system of higher education is more than just an economic engine for the state. It also is critical to enhancing the quality of life in many other ways, as well. Colleges, universities, and other educational institutions contribute a great deal toward making their states and localities better places to live and to work. Higher education bestows benefits that range from the discovery and dissemination of knowledge to the intellectual, cultural, and artistic stimulation of their communities.

The state gains substantially from the economic and civic contributions of higher education. A recently completed "report card" on every state considered the economic benefits of higher education. That report, *Measuring Up 2000, The State-by-State Report Card*, concluded that if all ethnic groups in Nevada had the same educational attainment and earnings as the majority white population, there would be $1.8 billion more in personal income and an estimated $647 million in additional tax revenues.

At the same time, higher education's purpose goes beyond training students for the labor market. There also is the obligation to mold citizens who can participate effectively in a democratic society. As stated by a university president from outside Nevada, "Institutions of higher education have no greater responsibility than to participate in the growth and development of people."

Goal 4: Targets

Institutions should be positioned as intellectual, cultural, and artistic centers and as the "marketplace for ideas."

Students need to be prepared to be involved citizens who participate in advancing collective civic, social, and cultural goals.

Improve Nevada's "educational benefits" measure on the National Center for Public Policy and Higher Education's Report Card from a C minus to at least a B grade. Factors in this comparison include levels of literacy skills, the percent of the population having college degrees and their income levels, voting participation, and charitable giving. This effort necessarily will affect sections of the state differently, but it is a starting point for strategizing.

Goal 4: Strategies

- Assure that every student has an opportunity for community service as part of his or her academic experience or through activities outside of academic programs.
- Encourage faculty to apply their knowledge and expertise to state, regional, and national concerns, and reward them for doing so.
- Expand opportunities for continuing education and lifelong learning.
- Increase Nevada's share of Federal funds that support the arts and humanities. The state's share of this funding is only about one-half of what it should be.

Goal 4: Shared Responsibility

The State of Nevada, the UCCSN, the Federal government, and Business and Community leadership are lead partners in accomplishing Goal 4.

LOOKING AHEAD

Despite, or perhaps even because of, the major challenges facing the state, Nevada has the opportunity to shape an excellent system of higher education. The Master Plan establishes guideposts by which the UCCSN and its institutions can respond in a timely, resourceful manner to the requirements for educational services of the highest quality.

Success requires the shared partnership and responsibility of other important stakeholders — the Governor and Legislature, students and their families, elementary and secondary educators, the Federal government, and business and civic leaders. We will falter in achieving the objectives of increased access and economic and social development if not all are involved.

The Goals are ambitious. It is important, therefore, that they be considered in the long term. The astounding demographic change affecting Nevada is envisioned within a 10-year timeframe. Desired public policy objectives of increasing college participation and graduation rates and bolstering academic research are other essential elements in the Plan. The UCCSN can and should respond to both demographic and policy components to the extent that those resources are available. At a minimum, continued progress should be demonstrated toward the four Goals throughout the coming decade.

Clearly defined benchmarks will help measure that progress. Once benchmarks are established, they must be monitored regularly to make sure there is consistent improvement and steady advancement. If Targets are not achieved, an assessment will determine if it is because of a miscalculation, a diminished priority, or a lack of resources.

Initially, much will rely on the efficient use of existing structures and institutions. The system is committed to reexamining all operations so that the most effective and efficient use is made of all available human, financial, and physical resources. While the present system can accommodate growth, there eventually must be an expansion of existing campuses or creation of new campuses. It is critical, however, that the state does not build a capacity that it does not need.

Reliable revenue streams must be identified before expansion occurs. As described earlier, thresholds must be established and triggers put in place so that logical decisions are made concerning the maximum and minimum size of campuses, the creation of new institutions and programs, and possible changes in the missions of existing institutions.

This Master Plan is a template but not a static blueprint. As dynamic demographic, economic, and social change swirls across Nevada, intriguing and tempting proposals will emerge. These must be measured against long-term perspectives and how they fit into the overall Master Plan. A periodic review is required to judge the accuracy of assumptions underlying the Plan. Although these recommendations are founded as firmly as possible on what the future might hold, exactly how that future unfolds can not be known with certainty.

FINANCING THIS INVESTMENT FOR NEVADA AND ITS PEOPLE

Figuring out what it will take to achieve this set of goals, though it has been a substantial task, pales in comparison to the difficulty the state of Nevada will face in actually bringing the plan to fruition. As reflected in the two following tables, virtually all partners in this venture will need to invest substantial real and hard-to-find dollars over the next decade to ensure that the state can indeed achieve its mission of providing high quality higher learning opportunities to all who can and wish to benefit from such an experience. Because of the unique demographic challenges facing Nevada, and because the state has not yet achieved the high standard it expects to achieve, financial efforts beyond what has been committed to this point will be required to achieve the goals set out for the future.

Student preparation, participation, and success

Substantial additional financial investments will need to be made to respond both to the natural increase in demand for higher education that will result simply from the increasing number of recent high school graduates and adults and to the desired increases in participation and success of those students who do continue their education.

The UCCSN is prepared to be the first to step up to this challenge. In the first year of this plan, Fiscal Year 2002, the System is prepared to absorb $8 million of the needed increase, equivalent to more than a 1 percent reduction in funding, through improvements in the efficiency of the system. Over the next decade the System will increase this commitment each year, so that by the end of the decade the System will have absorbed $80 million in efficiencies, representing a reduction of 10 percent in funding per student. Through these increases in efficiency the System

will provide its 25 percent share of the overall increase in funding that will be needed to achieve the targets established in this plan.

Students and their families will also need to contribute substantially more than today to achieve this goal through increases in tuition and fees. Although Nevada has a proud history of maintaining low tuition rates for its citizens, it is simply unreasonable to sustain this approach to financing Nevada's system of higher education in the challenging future that faces the state. And, as the principal beneficiaries of the services to be provided, it is reasonable that students and their families should be a significant partner in sharing the cost of providing these services. Budget figures already approved for Fiscal Year 2002 presume an increase in tuition of 3.5 percent, which is only enough to cover the projected increase needed to offset inflation. This increase will not be enough to cover the 4 percent increase per year above inflation that will need to be achieved over the decade to cover the contribution assumed from students and their families. The following table projects a total increase, before inflation, of $18 million that would be needed from students and their families. The $10 million currently budgeted for FY 2002, nearly $3.5 million of which will be needed simply to offset inflation, will fall approximately $12 million below the amount assumed in the strategic plan. As indicated earlier, student tuition rates will need to rise by 40 percent, after adjusting for inflation, in order for students and their families to contribute their 25 percent share of the overall increase in funding that will be needed.

The State of Nevada must also contribute substantially more in the future than it has in the past if the goals established in this strategic plan are to be achieved. It is assumed in this plan that the State will pick up one-half of the overall increase in funding the increased demand for services, which would amount to an assumed funding increase of $16 million above inflation in FY 2002, increasing to $160 million annually in 10 years. The $30 million increase in state appropriation from FY 2001 to FY 2002 nearly matches this need, with $15 million going to offset inflation and the remaining $15 million thus available for increasing services. Yet, sustaining this share of the partnership will, without doubt, remain difficult for the State. In addition to the straightforward impact of funding the System to support this anticipated growth, the State will face the additional difficulty of the loss of estate tax revenues, which have traditionally been used to fund a portion of the State's share of higher education expenses. These funds will need to be found from other State sources. Furthermore, the plan calls for implementing a new need-based financial aid program, which will be imperative to protect students from low- and moderate-income families, given the projected increases in tuition. The cost of this program to the State will be about $9 million in the first year of implementation, and will grow to about $22 million by the end of the 10-year planning cycle.

Other partners in this shared responsibility plan will also need to contribute over the next few years, though the specific financial implications of their partnerships have not yet been established. What is clear, however, is that enhancing efforts to better prepare students who come from traditionally underrepresented groups will also require additional resources from the State, from the K-12 system, and from the business community.

Ensuring educational excellence

Estimating the financial investment that will be necessary to achieve the goal of ensuring educational excellence, as laid out in this plan, is difficult because some additional planning is necessary before firm estimates of the fiscal impact can be determined. For example, there is no doubt that the proposed robust approach to assessment and public accountability, particularly with respect to assessing student learning, will require resources substantially beyond what are expended by the State and the System today for these purposes. The actual costs, however, will not be clear until the State and the System have agreed upon the best approach for Nevada to pursue in achieving this objective.

Likewise, establishing the fiscal implications of enhancing the research and learning environment are difficult to put dollar figures on today, though it is clear that successfully achieving this goal, particularly in the area of research, presumes a substantially greater commitment from the Federal government.

Reinforcing the economy

Estimating the fiscal requirements of complying with this goal will require further collaboration between the System, the State, and the business community. Obviously, increasing the share of research funding that comes from the Federal government and the private sector would assist greatly in achieving this goal. Simply increasing the Federal share of funding for science and engineering R&D from Nevada's current 55 percent to the WICHE average of 70 percent would increase Federal research funding by $13 million, thus either freeing these resources for other services or providing this additional amount for funding scientific R&D in Nevada.

Advancing society

Much of the work required to achieve this goal will require changes in the way business is done, rather than additional resources. Modest additional investments, however, will be necessary to fully achieve the targets laid out for this goal. Specifically, funding for Nevada from the National Endowments for the Arts and Humanities should be increased to more adequately reflect the share that should accrue to Nevada. Currently Nevada receives about $2 million, combined, from these two National Endowments, which represents 0.7 percent of the total Federal funding available. If doubled by the end of the planning period, Nevada would receive an additional $2 million to contribute toward this goal. Increasing Nevada's share to 1.5 percent would also more accurately reflect the share of the Nation's population that will reside in Nevada by the end of the decade.

All in all, achieving the targets laid out in this Master Plan will require nearly heroic efforts and sacrifice on the part of many partners, particularly the UCCSN, the students and their families, and the State. Yet, not responding to this challenge could prove catastrophic for the state. Nevada already lags others in many respects. It cannot afford to fall further behind. In fact, it has an affirmative responsibility to its citizens to move forward. This strategy of shared responsibility will help achieve such a vision for the future.

A fiscal framework for achieving success through shared responsibility

Additional Financial Commitment required FY 2002*

Goals and Targets	System	Students/ Families	State	K-12	Business & Community	Federal
Student Preparation, participation, and success						
Maintain at current levels	$5m	$11m	$10m	0	0	0
Resources for Policy Induced growth	$3m	$7m	$6m	0	0	0
Merit and need-based aid	0	0	$9m	0	0	$1m
Support for underrepresented	tbd	0	tbd	tbd	tbd	0
Expanding education delivery	tbd	0	tbd	0	tbd	0
Ensuring educational excellence						
Assessment and accountability	tbd	0	0	0	0	0
Mission definition and differentiation	0	0	0	0	0	0
Enhanced research and learning environment	tbd	0	tbd	0	tbd	tbd
Reinforcing the economy						
Expanding and targeting research	tbd	0	tbd	0	tbd	$2m
An agenda for education and workforce training	tbd	0	tbd	0	tbd	tbd
Advancing society						
Knowledge and cultural leadership	tbd	0	tbd	0	tbd	tbd
Service to students and communities	tbd	0	tbd	0	tbd	tbd

* *2001 dollars*

A fiscal framework for achieving success through shared responsibility

Goals and Targets	Additional Financial Commitment required FY 2011*					
	System	Students/ Families	State	K-12	Business & Community	Federal
Student Preparation, participation, and success						
Maintain at current levels	$48m	$107m	$96m	0	0	0
Resources for Policy Induced growth	$32m	$72m	$64m	0	0	0
Merit and need-based aid	0	0	$22m	0	0	$7m
Support for underrepresented	tbd	0	tbd	tbd	tbd	0
Expanding education delivery	tbd	0	tbd	0	tbd	0
Ensuring educational excellence						
Assessment and accountability	tbd	0	tbd	tbd	0	0
Mission definition and differentiation	0	0	0	0	0	0
Enhanced research and learning environment	tbd	0	tbd	0	tbd	tbd
Reinforcing the economy						
Expanding and targeting research	tbd	0	tbd	0	tbd	$13m
An agenda for education and workforce training	tbd	0	tbd	0	tbd	0
Advancing society						
Knowledge and cultural leadership	tbd	0	tbd	0	tbd	$2m
Service to students and communities	tbd	0	0	0	tbd	0

* *2001 dollars*

A NOTE ON SOURCES

This Master Plan reflects months of research, thought, and discussion among the Regents and its staff, the UCCSN Chancellor and her staff, college and university administrators across the state, and contributions from consultants and colleagues in higher education in Nevada, the Western region, and the nation.

The most useful studies and reports included:

The Road Less Traveled: Redesigning the Higher Education System of Nevada by Rand's Council for Aid to Education, March 2001.

A Technology Strategy for Nevada by the Battelle Memorial Institute's Technology Partnership Practice, December 2000.

Measuring Up 2000: *The State-by-State Report Card for Higher Education* by the National Center for Public Policy and Higher Education, 2000.

Population and Occupational Information by Nevada State Demographer's Office, June 2000.

Policy Indicators for Higher Education: WICHE States by the Western Interstate Commission for Higher Education, November 2000.

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